

Remarks

I. Double Patenting

The Office Action rejects claim 28 under the judicially created doctrine of double patenting over claim 1 of U.S. Patent No. 6,247,060.

Applicants respectfully disagree with the Office Action statement that “the sole difference in both cases characterized by the the terms ‘protocol processing stack’ (as cited in the U.S. Patent No. 6247060) and ‘a central processing unit running protocol processing instructions’ (as cited in the instant application) are in fact functionally identical.”

Moreover, claim 28 recites an ownership bit disposed in the local host, said ownership bit designating whether said CPU or said CPD controls said connection, which is not recited in claim 1 of U.S. Patent No. 6,247,060. For at least these reasons, applicants respectfully submit that a prima facie case of double patenting has not been presented.

II. 35 U.S.C. §102

Claims 1-8, 10-14, 16-27, 29-40 and 42 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,345,302 to Bennett et al. (“Bennett”). Regarding claims 1-3, the Office Action states:

As to claims 1-3, Bennett teaches the invention as claimed including: a system for communication between a local host and a remote host that are connectable by a network, the system comprising: a communication processing device (CPD) [2000, Fig. 3] that is integrated into the local host to connect the network and the local host, said CPD including hardware logic configured to process network packets, and a central processing unit (CPU)[10, Fig. 3] running protocol processing instructions in the local host to create a transport layer connection between the local host and the remote host [col.4, lines 44-50], wherein said CPD and said CPU are configured such that a message transferred between the network and the local host is generally processed by said CPD instead of said CPU when said CPD controls said connection [col.4, lines 60-65; col.21, lines 4-37], wherein said hardware logic is configured to process Transmission Control Protocol (TCP) and said transport layer connection is a Transmission Control Protocol (TCP) connection [Abstract].

Applicants respectfully but strongly disagree with the Office Action statement that Bennett teaches or suggests a CPD that controls a transport layer connection. Neither the passages cited by the Office Action [col.4, lines 60-65; col.21, lines 4-37] nor any other portion of Bennett provides such a teaching or suggestion. However, claim 1 has been amended to read:

A system for communication by a local host that is connectable by a network to a remote host, the system comprising: a communication processing device (CPD) that is integrated into the local host to connect the network and the local host, said CPD including hardware configured to analyze Internet Protocol (IP) and Transmission Control Protocol (TCP) headers of network packets, and a central processing unit (CPU) running protocol processing instructions in the local host to create a TCP connection between the local host and the remote host, said CPU providing to said CPD a media-access control (MAC) address, an IP address and a TCP port that correspond to said connection, wherein said CPD and said CPU are configured such that a message transferred between the network and the local host is generally processed by said CPD instead of said CPU when said CPD controls said connection and said message corresponds to said connection.

Support for the limitation that the hardware is configured to analyze Internet Protocol (IP) and Transmission Control Protocol (TCP) headers of a network packet can be found in the original application on pages 21, 27, 28, 39 and 40, for example. Support for the limitation that the CPU provides to the CPD a media-access control (MAC) address, an IP address and a TCP port that correspond to the connection can be found in the original application on pages 11, 31 and 32, for example.

Claims 2-8, 10-14 and 16, recite various limitations in addition to those recited in claim 1. Applicants respectfully assert that claims 2-8, 10-14 and 16 are patentable for at least the reasons mentioned above with regard to claim 1.

Regarding claim 17, the Office Action states:

As to claim 17, Bennett teaches the invention as described in claim 1 including: a system for communication between a local host and a remote host that are connectable by a network, the system comprising:

a communication processing device (CPD) that is integrated into the local host to connect the network and the local host, said CPD including hardware logic configured to process network packets, and a central processing unit (CPU) running protocol processing instructions in the local host to create a transport layer connection between the local host and the remote host, wherein said CPD and said CPU are configured such

that a packet transferred between the network and the local host is processed by said CPD instead of said CPU when said CPD controls said connection [Figs. 3 & 9; col.4, lines 60-65; col.21, lines 4-37; Abstract; Note that the TCP acknowledgement packet is independently prepared by the CPD without CPU's involvement].

As mentioned above with regard to claim 1, applicants respectfully but strongly disagree with the Office Action that Bennett teaches or suggests a CPD that controls a transport layer connection. Neither the passages cited by the Office Action [Figs. 3 & 9; col.4, lines 60-65; col.21, lines 4-37] nor any other portion of Bennett provides such a teaching or suggestion. Applicants note that the Office Action also argues: "Note that the TCP acknowledgement packet is independently prepared by the CPD without CPU's involvement." Bennett's mechanism for this is described in column 16, lines 19-35, which state:

Upon successful defragmentation of the datagram and validation of all applicable checksums, local node 1000 generates an acknowledgment (ACK) to be sent back to remote node 276. Referring back to FIG. 11B, TCP logic 93 includes acknowledgment (ACK) logic 115, allowing TCP processing in local node 1000 in the preferred embodiment to automatically generate an ACK segment (a TCP segment containing a set ACK flag in the TCP header). To accomplish this, protocol logic 45 saves the fields necessary to automatically generate the ACK datagram. These fields are taken from the protocol logic state and the incoming datagram headers. The saved data includes source IP address, datagram sequence identification number, source TCP port number, destination port number, and the available datagram memory (used for window size). These values are stored by TCP logic 93 in command list 42, which is resident in protocol logic 45.

Instead of teaching or suggesting a CPD that controls a transport layer connection, this passage makes clear that the fields used to generate an ACK "are taken from the protocol logic state and the incoming datagram headers," showing that the protocol logic state is maintained and controlled elsewhere. Despite this clear differentiation, claim 17 has been amended to read:

A system for communication by a local host that is connectable by a network to a remote host, the system comprising: a communication processing device (CPD) that is integrated into the local host to connect the network and the local host, said CPD including hardware configured to analyze Internet Protocol (IP) and Transmission Control Protocol (TCP)

headers of network packets, and a central processing unit (CPU) running protocol processing instructions in the local host to create a TCP connection between the local host and the remote host, said CPU providing to said CPD a media-access control (MAC) address, an IP address and a TCP port that correspond to said connection, wherein said CPD and said CPU are configured such that a packet transferred between the network and the local host is processed by said CPD and not by said CPU when said CPD controls said connection and said packet corresponds to said connection.

Support for the limitation that the hardware is configured to analyze Internet Protocol (IP) and Transmission Control Protocol (TCP) headers of a network packet can be found in the original application on pages 21, 27, 28, 39 and 40, for example. Support for the limitation that the CPU provides to the CPD a media-access control (MAC) address, an IP address and a TCP port that correspond to the connection can be found in the original application on pages 11, 31 and 32, for example.

Regarding claims 18-27 and 29-40, the Office Action states:

As to claims 18-27 and 29-40, since the features of these claims can also be found in claims 1, 4-6, 8, 10-14 and 16-17, they are rejected for the same reasons set forth in the rejection of claims 1, 4-6, 8, 10-14 and 16-17.

Applicants respectfully assert that claims 18-27 and 29 recite various limitations in addition to those recited in claim 17. Applicants respectfully assert that claims 18-27 and 29 are patentable for at least the reasons mentioned above with regard to claim 17.

The Office Action does not specifically address the different limitations found in independent claim 30. For example, claim 30 includes the limitation of the "CPD classifying a second network packet as corresponding to said connection and processing said second network packet without any processing of said second network packet by said CPU." This limitation is not taught or suggested in Bennett, and for that reason claim 30 is patentable over Bennett. Claim 30, however, has been amended to read:

A system for communication between by a local host and a remote host that are that is connectable by a network to a remote host, the system comprising: a central processing unit (CPU) disposed in the local host and running protocol processing instructions to create a Transmission Control Protocol (TCP) connection between the local host and the remote host, said CPU processing a first network packet corresponding to said connection; and a communication processing device (CPD) integrated into

the local host and connected to the network, said CPU providing to said CPD a media-access control (MAC) address, an Internet Protocol (IP) address and a Transmission Control Protocol (TCP) port that correspond to said connection, said CPD receiving control of said connection from said CPU, said CPD classifying a second network packet as corresponding to said connection and processing said second network packet without any processing of said second network packet by said CPU.

Support for the limitation that the CPU provides to the CPD a MAC address, an IP address and a TCP port that correspond to the connection can be found in the original application on pages 11, 31 and 32, for example.

Applicants respectfully assert that claims 31-41 recite various limitations in addition to those recited in claim 30. Applicants respectfully assert that claims 31-41 are patentable for at least the reasons mentioned above with regard to claim 30.

Regarding claim 42, the Office Action states:

As to claim 42, Bennett further teaches that said second network packet is received from the network by the local host [i.e., as described in the comments relating to the rejection of claim 17, in a similar manner a remote node may send an acknowledgement signal, which is received by the local CPD without involvement of the local CPU].

Applicants respectfully assert that Bennett does not teach the limitations of claim 42, as implicitly admitted by the Office Action's failure to point to such a limitation in Bennett, but to instead argue that this limitation may occur in a similar manner to allegations of the Office Action regarding claim 17. As noted above, the Office Action also does not provide a specific rejection of independent claim 30, from which claim 42 depends. Moreover, as discussed above, applicants respectfully assert that the Office Action allegations regarding claim 17 are incorrect.

For at least the forgoing reasons, the Office Action does not state a prima facie case of anticipation of any of the pending claims over Bennett.

III. 35 U.S.C. §103

Claims 28 and 41 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bennett in view of U.S. Patent No. 6,173,333 to Jolitz et al. Regarding claim 28, the Office Action states:

As to claim 28, Bennett does not specifically teach using an ownership bit disposed in the local host to designate whether said CPU or said CPD controls said connection.

However, in the same field of endeavor, Jolitz teaches a bypass mechanism for incoming/outgoing TCP/IP packets to bypass a TCP/IP accelerator under various conditions such as [e.g., col.5, lines 44-53; col.6, lines 1-8].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a bypass route for Bennett's network processor for non-TCP/IP packets (or when the network processor is unavailable) because Bennett's network processor is dedicated for portions of TCP/IP processing and the bypass route would facilitate the CPU's take over of the entire TCP/IP processing.

"Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so. Although couched in terms of combining teachings found in the prior art, the same inquiry must be carried out in the context of a purported obvious 'modification' of the prior art. The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992). See also *In re Lee*, 277 F.3d 1338, 1342-1343 (Fed. Cir. 2002); *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, (Fed. Cir. 2001).

As noted in the Office Action regarding claim 28, Bennett does not teach using an ownership bit disposed in the local host to designate whether said CPU or said CPD controls said connection. Similarly, Jolitz does not teach, as recited in claim 28, an ownership bit disposed in the local host, said ownership bit designating whether said CPU or said CPD controls said connection. Applicants note that the Office Action does not assert that Jolitz teaches such an ownership bit. Obviousness is not found in the absence of "any specific hint or suggestion in a particular reference." *In re Lee*, 277 F.3d at 1344. Applicants further note that the Office Action does not assert that the modification of Bennett with Jolitz as proposed in the Office Action would somehow

result in a an ownership bit, and for that additional reason the Office Action has not presented a prima facie case of obviousness for claim 28.

Moreover, applicants respectfully disagree with the Office Action statement that “It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement a bypass route for Bennett’s network processor for non-TCP/IP packets (or when the network processor is unavailable) because Bennett’s network processor is dedicated for portions of TCP/IP processing and the bypass route would facilitate the CPU’s take over of the entire TCP/IP processing.”

If this Office Action assertion stems from the Examiner’s personal knowledge, applicants respectfully request that the Examiner provide a supporting affidavit as required by 37 C.F.R. §1.104(d)(2). If this assertion is instead based on judicial notice, applicants respectfully request that the Examiner provide a supporting reference document.

Regarding claim 41, the Office Action states:

As to claim 41, since the features of these claims can also be found in claims 17, 28 and 30, it is rejected for the same reasons set forth in the rejection of claims 17, 28 and 30 above.

Applicants respectfully assert that claim 41 is nonobvious for all of the reasons mentioned above with regard to claim 28. In addition, because claim 30 contains different limitations than claim 17, and the Office Action does not provide any reason why those additional limitations would be obvious, claim 41 is nonobvious for that reason also.

In short, the Office Action has not presented a prima facie case of obviousness for any claim.

IV. Other Prior Art

The Office Action states:

The prior art made of record and not relied upon is considered pertinent to applicant’s disclosure: Connery et al. [U.S. Pat. No. 5937169].

It is not clear that Connery is prior art to the present application, which claims priority to an application filed prior to Connery. *Assuming arguendo* that Connery is

prior art to the present application, applicants respectfully assert that Connery does not anticipate or, in combination with other references, render obviousness any of the claims.

V. Conclusion


Applicants have responded to each of the items of the Office Action, showing that the Office Action has not presented a prima facie case of anticipation or obviousness for any of the claims. As such, applicants respectfully assert that the application is in condition for allowance, and a notice of allowance is solicited.


Respectfully submitted,

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450, on November 14, 2005.

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